# A Qualitative study of Possible Drivers and Barriers to Consumer Adoption of Open Banking Services

Malena Nyström

Master's Thesis

International Business Management, Fintech track

2020

| MASTER'S THESIS | |
|---|---|
| Arcada University of Applied Sciences | |
| | |
| Degree Programme: | International Business Management |
| | |
| Identification number: | 7755 |
| Author: | Malena Nyström |
| Title: | A Qualitative study of Possible Drivers and Barriers to Consumer Adoption of Open Banking Services |
| Supervisor (Arcada): | Niklas Eriksson |
| | |
| Commissioned by: | |


Abstract:

This qualitative study aims to generate insights on the possible drivers and barriers for consumer adoption of open banking third-party provider services, so-called challenger bank services. It addresses one research question: What are the possible drivers and barriers to consumer adoption of third-party open banking services? The main literature is the diffusion of innovations theory by Rogers (2003), the model for resistance to innovation by Ram and Seth (1989), as well as prior research on adoption of both technological banking services and open banking services. Semi-structured interviews were conducted for this study, and a thematic analysis was completed on the interview transcripts with eight respondents divided into three groups: experts, adopters and non-adopters. The findings of this study show seven possible drivers and eight possible barriers to consumer adoption of open banking third-party provider services, and said findings are reasonably matched with adoption of innovation theories and previous studies on the adoption of online and open banking services. The thesis also discusses managerial implications for third-party open banking service providers and traditional banks, as well as some limitations in the applied methodological approach.



| Keywords: | *Open Banking, Third Party Provider, Electronic Money Institution, GDPR, Challenger Bank, Account Information Service Provider, PSD2, Resistance, Adoption, Innovation* |
|---|---|
| Number of pages: | 52 |
| Language: | English |
| Date of acceptance: | 25.5.2020 |

# CONTENTS

## Tables

LIST OF ABBREVIATIONS

PSD2 – The Second Payment Services Directive

API - Application Programming Interface

AIS – Account Information Service

ASB – Account Servicing Banks

GDPR – General Data Protection Regulation

EMI – Electronic Money Institution

TPP – Third Party Provider

PISP – Payment Initiation Service Provider

AISP – Account Information Service Provider

# 1 INTRODUCTION

Open banking is strongly challenging conventional banking, especially after the European Union's Second Payment Services Directive (PSD2), designed to level the retail banking playing field in favor of the consumers, came into full force, the variety of available open banking services have been growing extensively. The PSD2 requires banks to make the access to their customers' data available for other companies through Application Programming Interfaces (APIs), but only to companies with whom the customers want to do business with. It's a question about consent and access. Mobey Forum (2019) states in their report on open banking that about a third of consumers are highly interested in open banking services. Capgemini Research Institute (2019) brings up the importance of traditional banks integrating into consumers' lives to meet intuitive convenience demands, and that open banking can help banks with that. Capgemini Research Institute (2019) found in the results of their study that traditional banks are falling behind on leveraging open banking.

Accenture Consulting (2019) published a quantitative study into open banking, and about building acceptance for open banking among Nordic consumers (Finland, Sweden, Norway and Denmark). The study describes open banking as *"a revolution transforming banking"* and states that open banking is expected to deliver *"new ways of doing business, with a broad range of options and added value for consumers"*. But how have the various open banking service providers succeeded in obtaining buy-in from the current and the potential Nordic consumers? Accenture did a survey on 4066 consumers in Norway, Sweden, Denmark and Finland to find the answer to that question as well as other aspects to the initial attitude towards open banking. They asked questions such as: *"How much do the Nordic consumers know about the concept of Open banking, and if they are familiar with the idea of Open banking, are they aware of the choices it brings?"*.

The results from the Accenture Consulting (2019) survey were almost unanimous across the various segments of the respondents (age, gender, income); the Nordic consumers don't know much about the available open banking services, and they aren't sure about what they know about open banking. Only 25% of the Nordic consumers are aware of

Account Information Services, Payment Initiation Services and open banking. Over 80% of the Nordic consumers see at least some risk in giving institutions their bank account information. Pleasantly enough, 40% of the Nordic consumers believe that the specified features that are facilitated by open banking service providers would be useful to them.

The overall Nordic consumer awareness of open banking is low, and so is the enthusiasm, but there are some country-specific differences to these results. In Denmark, 35% of the consumers are aware of Account Information Service Providers (AISPs), 65% of the consumers are not aware of such providers. In Finland, only 12% of the consumers are aware of AISPs, 88% are not aware of them. In Norway, 27% of the consumers are aware of AISPs, and 73% are not aware of them. In Sweden, 24% of the consumers are aware of the AISPs and 76% are not aware of these providers. *"The study shows that, despite consumers' initial reluctance, there are multiple reasons for optimism"*, Accenture Consulting (2019) states. Some of the conclusions are that by increasing the consumer knowledge, by showing tangible benefits, and by bolstering the security, the Nordic consumers will become receptive to open banking services. (Accenture Consulting, 2019)

As the consumer awareness is shown to be the lowest in Finland when it comes to Account Information Service Providers and Payment Initiation Services, this thesis will continue from Accenture's quantitative study, with a qualitative study into the possible reasons for consumer adoption or non-adoption of open banking third-party provider services.

## 1.1 Purpose of the study

The purpose of this study is to investigate the possible drivers and barriers to consumer adoption of open banking third-party services, mainly services provided by Electronic Money Institutions, also referred to as Challenger Banks. Thus, the following research question is raised:

> *What are the possible drivers and barriers to consumer adoption of third-party open banking services?*

The focus is on investigating this issue by interviewing experts from the Nordics within the field of Financial Technology and open banking, consumers who have adopter one or

several of these services, as well as consumers who have no previous experience of such services.

## 1.2 Structure of the study

The study is structured as follows; first a literature review that presents the Second Payment Services Directive (PSD2), the General Data Protection Regulation (GDPR), account information service providers, payment initiation service providers, electronic money institutions and examples of such institutions, the diffusion of innovations theory by Rogers (2003), the decision process of innovation adoption theory by Roger (2003), the model for resistance to innovation theory by Ram and Seth (1989), as well as prior research on adoption of technological banking services and open banking, followed by a description of the research methods, data collection and data analyses for this study. Finally, the results are presented and discussed, together with recommendations. The discussion chapter then follows with a summary of the findings of the study, together with managerial implications, limitations, suggestions for further research into the area, as well as conclusions.

# 2 LITERATURE REVIEW

## 2.1 PSD2 (Second Payment Services Directive)

The Second Payment Services Directive, referred to as PSD2, goes under the title: Directive (EU) 2015/2366 of the European Parliament and of the Council on Payment Services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC.
The deadline for the transposition of the Second Payment Services Directive into national law was 13 January 2018. For Finland, the PSD2 was transposed into two parts; The Payment Services Act was amended by Act 898/2017 and the Payment Institutions Act was amended by Act 890/2017. These amendments came into force on 13 January 2018.

The objective of the PSD2 is to extend the reach of regulation to various types of payment services and to update the regulation of payment services to be in line with and up to

standard with market developments. The key changes made to the payment services legislation by creating the PSD2 was to extend the scope of the application of the original Payment Services Act (came into force in 2009 across Europe) to include Third Party Providers (TTPs) in the scope of the regulation and supervision. With these changes two new types of providers of payment services were introduced:

- Payment Initiation Service Providers (PISP)
- Account Information Service Providers (AISP)

The PSD2 states that the Account Servicing Banks are obliged to provide these TTPs the access to the customer accounts following the explicit consent of the customer. This means that the PISP and the AISP have the right to utilize strong customer authentication procedures provided to the customer by the original Account Servicing Banks (ASB). The scope of the PSD2 also includes issuing card-based payment instruments connected to an account that is provided by another payment service provider.

PSD2 requires the payment service providers to apply strong customer authentication when customers initiate electronic payment transactions and access their payment accounts online. On 14 September 2019 the requirements for applying strong customer authentication entered into force. This was 18 months after the publication of the Commission Delegated Regulation for technical standards for strong customer authentication as well as the common and secure open standards of communication. In Finland, the Financial Supervisory Authority established the PSD2 Monitoring Group with the objective to disseminate topical information to the industry, have discussions about interpretation of the PSD2, as well as give guidance and advice to supervised entities about the PSD2. (Financial Supervisory Authority, 2019)

## 2.2 General Data Protection Regulation

The regulation (EU) 2016/679 of the European Parliament and of the council of 27th of April 2016, also referred to as General Data Protection Regulation (GDPR), was deemed applicable as of 25th of May 2018 in all member states of the European Union. The aim

of the GDPR was to harmonize data privacy laws across the member states, and to *"lay down rules relating to the protection of natural persons with regard to the processing of personal data and rules relating to the free movement of personal data"*, as well as protect the *"fundamental rights and freedoms of natural persons and in particular their right to the protection of personal data"*. The GDPR requires that personal data shall be processed in a transparent, lawful and fair manner to the data subject, and that all personal data shall be collected only for a legitimate, explicit and specified purpose. All the collected personal data must be accurate, and if necessary, it shall be kept up to date. If the personal data that has been collected is inaccurate it needs to be erased or rectified without any delay. Collected personal data should be processed in a way that ensures an appropriate level of security of the data, which means that it needs to be protected against unauthorized or unlawful use, and protected against accidental loss, damage or destruction.

The GDPR states that every individual has the right to obtain confirmation as to whether or not their personal data is being processed, the purpose of the processing of their data, the categories of personal data that the processing concerns, as well as the source of the data if not collected from them personally. After making the request for the previously mentioned information, every individual has the right to get said information without undue delay, but at the latest within one month of receipt of the request. The GDPR also enforces *"the right to be forgotten"*, which means that every individual has the right to have their personal data erased without undue delay as long as the personal data isn't necessary any longer for the purposes that they were collected, the personal data has been unlawfully processed, as well as in the case of other grounds applying to the request. (The European Parliament, 2016)

## 2.3 Account Information Service Providers

The Second Payment Services Directive, referred to as PSD2, brought up the emergence of complementary services due to technical developments, and named AISPs as one of the emerging types of service providers. The Financial Supervisory Authority (2019) defines Account Information Services as *"an online service to provide consolidated*

*information on one or more payment accounts held by the payment service user with either another payment service provider or with more than one payment service provider"*. AISPs are defined by the Financial Supervisory Authority (2019) as *"a payment service provider pursuing business activities as referred to by a natural or legal person who holds a payment account and allows a payment order from that payment account, or, where there is no payment account, a natural or legal person who gives a payment order"*.

AISPs provide the consumers of payment services with aggregated information online on one or several payment accounts, accounts with one or several service providers, that can be accessed through various online interfaces that are set up by the account servicing payment service provider. Thanks to this, the consumer with an overall view of their financial situation at any given moment. The AISPs are covered by the Second Payment Services Directive (PSD2) to give consumers the adequate protection for their account data and payments. AISPs can provide their services on a cross-border basis, *"benefiting from the passporting rules"*. This specific prudential regime is provided to AISPs due to the specific nature of the services they provide, and the risks connected to the provision of such services. (Financial Supervisory Authority, 2019)

## 2.4 Payment Initiation Service Providers

The European Union states in DIRECTIVE (EU) 2015/2366, the Second Payment Services Directive, which is also referred to as the PSD2, that since the adoption of DIRECTIVE 2007/64/EC several new types of payment services have emerged, especially Payment Initiation Services have evolved in the field of e-commerce. These types of payment services establish a so-called "software bridge" between websites of merchants and the online banking platform used by the payer.

Payment Initiation Service Providers (PISPs) provide a type of comfort to a consumer by confirming that the payment has been initiated in order to give an incentive to the consumer to release the goods or deliver a service without undue delay. Payment Initiation Services offer solutions for both merchants and consumers to shop online even without possessing payment cards. These services are offered at a low-cost for merchants

and consumers. It's stated in the PSD2 that when providing only payment initiation services, the PISP does not at any stage hold the consumer's funds and that the PISP needs to obtain full authorization for their services. PISPs are based on either direct or indirect access to the consumer's account. The Financial Supervisory Authority (2019) defines a Payment Initiation Services as *"a service to initiate a payment order at the request of the payment service user with respect to a payment account held at another payment service provider"*. PISPs are defined as *"a payment service provider pursuing business activities as referred to in point (7) of the Second Payment Services Directive"*.

The PSD2 states clearly that the Member States are obliged to ensure that the PISPs will, prior to initiation, provide the consumer with, or make available to the consumer, the following information clearly and comprehensively: (a) the name of the PISP, the geographical address of the PISP's head office, as well as any other contact details, such as electronic mail address, and (b) the contact details for the competent authority. In addition to this, the PISP shall immediately after initiation of payment, provide or make available the following data to the consumer: (a) confirmation of a successfully initiated payment order, (b) a reference that can be used for identifying the payment transaction, (c) the amount that was transferred in the payment transaction, and (d) if possible, the amount of charges to the PISP for the transaction together with a breakdown of the amounts of such charges. A PISP shall ensure that any information obtained when providing payment initiation services about the service user is only given to the consumer with the payment service user's consent. The PISP is not allowed to request any other data than those necessary to provide the service. (Financial Supervisory Authority, 2019)

## 2.5 Electronic Money Institutions

The European Parliament (2019) states in DIRECTIVE (EU) 2015/2366, the Second Payment Services Directive, which is also referred to as the PSD2, that the member states of the European Union will allow Electronic Money Institutions (EMIs) to *"distribute and redeem electronic money through natural or legal persons which act on their behalf"* and that *"Electronic Money Institutions shall be allowed to provide payment services"*.

In DIRECTIVE (EU) 2009/110/EC the European Parliament (2019) states that already in September 2000 the European Parliament allowed EMIs to emerge in response to new prepaid electronic payment products. This change in the legal framework was designed to *"strengthen the internal market while ensuring an adequate level of prudential supervision"*. The directive by the European Parliament (2019) made the following statement about EMIs: *"It is recognized that Electronic Money Institutions distribute electronic money, including by selling or reselling electronic money products to the public, providing a means of distributing electronic money to customers, or of redeeming electronic money on the request of customers or of topping up customers' electronic money products, through natural or legal persons on their behalf, according to the requirements of their respective business models"*.

The definition by the European Parliament (2019) for electronic money includes electronic money both if it's held on a payment device of some kind in the electronic money holder's possession and if it's stored on a server remotely and managed through an account for electronic money. The European Parliament assumed that this definition should be wide enough to cover not only all the electronic money products that were available at the time that this directive was published, but also the products that would be developed in the future. The same directive also states the importance of the sound and prudent operation of EMIs, that there needs to be full supervisory discretion for EMIs just as well as for all payment service providers, and that EMIs are subject to effective anti-money laundering and anti-terrorist financing rules.

The European Parliament stated that EMIs are not allowed to grant credit from the funds that they receive or hold for the purpose of issuing electronic money. No matter the length of time that the electronic money holder holds the electronic money, the electronic money issuers are not allowed to grant interest or other benefits based on the time of the holding of these funds. (The European Parliament, 2019)

## 2.6 Examples of Electronic Money Institutions, so-called Challenger Banks

### 2.6.1 Revolut

Revolut is a registered EMI that was launched in July 2015. In their webpages they describe the reason behind them founding the company that *"today's hyper-connected world deserves a financial partner just as progressive"*. In their fair usage policy, they state that their mission is to save their customer as much money as possible. A Revolut account can be opened in just minutes, and depending on the level of the account it includes services such as:

- Payment notifications
- Reports of monthly spending
- International money transfers and exchange in 30 currencies
- Use of the payment card abroad in over 150 currencies
- Recurring payments
- A United Kingdom GBP account
- A Euro IBAN account
- ATM withdrawals up to 400€ per month without any fees
- Access to 5 different cryptocurrencies
- Disposable virtual cards

In their security information they list actions they have taken to keep their customers' accounts safe, such as fingerprint identification, disposable virtual cards, as well as an anti-fraud system with real-time alerts of fraudulent activity. Soon they are launching a feature called 3D Secure, that makes certain ecommerce payments available only by verifying them through a mobile notification. (Revolut, 2020)

### 2.6.2 TransferWise

TransferWise is an authorized EMI founded in 2010 in Estonia. On their webpages it's stated that their vision when founding the company was to *"make international money*

*transfers cheap, fair, and simple"*. With their multicurrency accounts it's possible to hold and manage money in more than 50 different currencies and send money to as many different countries. It's free to set up an account at TransferWise, and the following services are free of charge for their standard accounts:

- Create an account
- Hold over 40 currency balances
- United Kingdom account number as well as a United Kingdom sort code
- United States routing and wiring number
- European IBAN number
- Australian account and BSB number
- Receive money in the following currencies: EUR, USD, PLN, AUD and NZD
- ATM withdrawals up to 200€ per month

TransferWise is regulated by the Financial Conduct Authority (FCA) in the United Kingdom. (TransferWise, 2020)

### 2.6.3 Monese

Monese is a registered EMI founded in September 2015. Monese was according to their webpages the first mobile account provider in the United Kingdom. They offer three different account levels, the first one being free of monthly costs and the costliest one being the Premium account for 14.95€ per month. The free account includes the following services:

- Contactless debit card
- ATM withdrawals for up to 200€ per month
- Spend up to 2000€ in foreign currencies monthly
- Foreign currency transfers between Monese accounts
- Apple and Google Pay
- Dual currency account: EUR and GBP
- Instant money transfers between Monese accounts

- Setting up recurring payments

(Monese, 2020)

### 2.6.4 N26

N26 is a registered EMI founded in 2013 with the vision of transforming the way people manage their money and to change banking for the better. According to their webpages they have over 1500 employees and offices in five different locations. N26 has a full European banking license, and their customers' money is protected by the German Deposit Protection Scheme for up to 100'000€. N26 currently has over 5 million customers in 25 different countries. They offer a free standard account with the following services:

- Transparent debit Mastercard
- Payments in 19 different currencies, without exchange rate fees, using TransferWise
- 5 free ATM withdrawals per month in EUR
- 2 sub-accounts for savings (these sub-accounts can be shared with up to 10 other N26 users)
- 3D Secure protection (additional authentication for purchases)
- Reports and statistics over spending habits, created with artificial intelligence

(N26, 2020)

## 2.7 Diffusion of Innovations theory

According to Rogers (2003) diffusion is *"the process by which an innovation is communicated through certain channels over time among the members of a social system"* and communication is *"a process in which participants create and share information with one another in order to reach a mutual understanding"*. With these definitions Rogers (2003) explains diffusion as a unique kind of communication, in which new ideas are communicated. A certain level of uncertainty is involved in this communication, due to the newness of the ideas. Rogers (20013) also describes diffusion

as a type of social change, in which changes are made in the structures and functions of a social system.

The four main elements of the Diffusion of Innovations theory are (1) innovation, (2) channels, (3) time, and (4) social system. Rogers (2003) defines innovation as "*an idea, practice, or object that is perceived as new by an individual or other unit of adoption*", and states that people often use "innovation" and "technology" as synonyms to each other due to lack of knowledge. Technology is defined by Rogers as "*a design for instrumental action that reduces the uncertainty in the cause-effect relationships involved in achieving a desired outcome*". There are most often two components to what we call "technology": (1) hardware, which is the tool that physically embodies the technology, and (2) software, which is the information base for the technological tool.

For potential adopters, technological innovation will create both a level of uncertainty about the expected consequences, as well as in another sense an opportunity for reducing some level of uncertainty by having the possibility to solve the individual's felt need or problem. Through this possibility the motivation for the individual to learn about the innovation is born, and through that information seeking the uncertainty is reduced and a decision about adoption or rejection can be made. The process for a decision about innovation is driven by information-seeking and information-processing where the individual is driven by the wish to know about the advantages and disadvantages of the innovation. There are characteristics of an innovation that can further explain the different pace that individuals choose to adopt them: (1) relative advantage, which is the degree to which an individual sees the innovation as something that can bring an advantage, (2) compatibility, which is the degree to which an individual sees the innovation as a thing that matches with the already existing values and norms of a social system or the individuals past experiences, (3) complexity, which is the degree to which an individual sees the innovation as easy or difficult to use, (4) trialability, which is the degree to which an individual is open to experimenting with the innovation, the less divisible the more quickly the innovation will be adopted, and (5) observability, which is the degree to which an individual finds the results of said innovation to be visible to other individuals, the easier it is to see the results of the innovation the more quickly the innovation will be adopted.

As communication channels are an essential part of the Diffusion of Innovation process it's important to define the essence of the communication. This process includes: (1) the innovation, (2) the individual or unit that has knowledge of the innovation, (3) another individual or unit that doesn't have knowledge of the innovation yet, and (4) the communication channel that has the possibility to connect the two individuals or units. Rogers (2003) defines a communication channel as "*the means by which messages get from one individual to another*". Mass media channels are considered to be one of the most efficient and rapid means to inform a larger group of potential adopters about the innovation, and by doing so create awareness-knowledge. A mass media channel is a means of transmitting messages through a mass medium. That mass medium could be e.g. radio, newspapers, or television. Though mass media channels are considered to be one of the most efficient and rapid means to inform about an innovation, interpersonal channels are more efficient ways of persuading an individual to adopt a new innovation, especially when this communication happens between two or more individuals who are near peers. Interpersonal channels are the face-to-face communication between two or more persons.

Time is the third important element in the Diffusion of Innovations and is also an obvious aspect of any process involving communication. It's part of the relative earliness or lateness of the adoption of an innovation. It's also part of the rate of adoption of an innovation in a system, which is most often measured by the number of members of said system that within a given time period adopts the innovation. Rogers (2003) states that "*time does not exist independently of events, but it is an aspect of every activity*". A social system is the fourth important element in the Diffusion of Innovations and is defined by Rogers (2003) as "*a set of interrelated units that are engaged in joint problem solving to accomplish a common goal*". The social system can be made up of individuals, informal groups of individuals, or organizations. The type of members in a social system can vary, but all members should seek to solve a common problem in order to reach a common goal. (Rogers, 2003)

### 2.7.1 Decision process of innovation adoption

The process through which the individual or unit goes starting from the first acquired knowledge of said innovation to when an attitude has been formed towards the innovation, to the decision to either adopt or reject the innovation is called the innovation-decision process. As defined by Rogers (2003), the innovation-decision process consists of five main steps: (1) knowledge, (2) persuasion, (3) decision, (4) implementation, and (5) confirmation.

The first step to this process, knowledge, occurs when the individual or unit is exposed to the existence of the innovation and is made aware of the possible gains of understanding how the innovation functions. The second step, persuasion, occurs when the individual or unit is able to form either a favorable or unfavorable opinion about the innovation. The third step to this process, decision, occurs when the individual or unit chooses to adopt or reject the innovation after engaging in activities that lead to this choice. The fourth step, implementation, occurs as the innovation is taken into use by the individual or unit. The fifth and last step, confirmation, takes place when the individual or unit looks for reinforcement of the already made decision made about the innovation. If the individual or unit receives conflicting messages the decision may be reversed.

The innovation-decision process will lead to one of two possible outcomes: adoption or rejection. The decision is not always permanent and can be reversed at a later point. Discontinuance is the situation where a decision has been made to adopt the innovation, but then later the decision is reversed and the individual or unit rejects the innovation. Discontinuance often happens either when the individual is dissatisfied with an innovation for some reason, or an improved idea replaces the innovation. The length of the innovation-decision process varies, but the period consists of the time required to pass through all the steps of the process. (Rogers, 2003)

## 2.8 Model for resistance to innovation

A study carried out by Ram and Seth (1989) aims to explain the reasons for consumers resisting adoption of necessary and desirable innovation, as well as identify the largest barriers that create this resistance. The authors identified two main answers to the question "Why resistance?"; fear of change, and conflict with consumers' prior belief structure. The timing of adoption of innovation is affected by innovation resistance, and adopters can be classified into categories: (1) innovators, (2) early adopters, (3) early majority, (4) late majority, and (5) laggards. Each of these adopter categories have different levels of resistance to innovation, and their level of resistance affects the timing of the adoption. The innovation resistance can also vary in degree. It starts from passive resistance and increases to active resistance.

There are two main categories of barriers that affect consumers' wish to adopt innovations: (1) functional barriers, and (2) psychological barriers. The functional barriers consist of three areas: patterns for product usage, value of product, and risks associated with the use of the product. The psychological barriers consist of two areas: the consumer's traditions and norms, and the perceived product image. (Ram & Seth, 1989)

### 2.8.1 Functional Barriers

It's common for consumers to show resistance towards an innovation due to its incompatibility with the consumers' existing workflows, habits and practices. This is called a usage barrier and is perhaps one of the most common reasons for resistance. Due to this, innovations that requires the consumers to change their routines will require a longer development process to gain acceptance. The second functional barrier for consumers is value. An innovation needs to offer the consumer a good enough performance-to-price value. This performance-to-price value needs to be better than the substitutes available, otherwise there is no or very low incentive for the consumer to make the change.

The last functional barrier for consumers is the risk barrier. Since any innovation will create a certain level of uncertainty consumers might postpone the adoption of the innovation until the point when they have learned more about it. There are four types of risks according to Ram and Seth (1989):

1. Physical risks – *"Harm to person or property that may be inherent in the innovation"*. An example for this type of risk is new drugs, as it's common that they carry some risk.
2. Economic risks – If the innovation comes with a higher cost, the perceived economic risk will also be higher. An example of this type of risk is personal computers, as they come at a high price when first released for sale.
3. Functional risks – There's a worry from the consumer about the innovation not having been tested sufficiently, and therefore it might not function like it should or be reliable. An example of this type of risk is new cars, as they often don't have any performance record.
4. Social risks – The fear of facing social ostracism or peer ridicule makes consumers resist the adoption of an innovation. An example of this type of risk is buying generic brand foods, as it might be seen as not acceptable to people.

(Ram & Seth, 1989)

### 2.8.2 Psychological Barriers

There are two categories to the psychological barriers. The first one being the tradition barrier, which comes into place when there's a need for cultural change for the consumer to take an innovation into use. When the innovation forces consumers to deviate from their established traditions it can create resistance. The greater the needed deviation from tradition, the greater the resistance.

The second psychological barrier is the image barrier. Since innovations are known to have a certain identity from either the product class, the country or the industry that they can be related to. If the identity that the innovation belongs to is negative or unfavorable, this can create a certain barrier to adoption of said innovation. This is a perceptual problem most often created purely by stereotyped thinking. (Ram & Seth, 1989)

## 2.9 Prior research on adoption of Technological Banking Services

Laukkanen and Kiviniemi (2010) did an empirical study on the role of information in mobile banking. They state that *"adopting technological service innovations entails substantial learning effort requiring information and guidance from the provider"*, and in their study they wanted to find out the effect that the information given by the banks has on the five adoption barriers when it comes to mobile banking. The study was conducted with an online survey on 2'060 customers of a bank in Finland, of which 1'551 customer responses were effective for the study. The five adoption barriers were examined in the survey through sixteen statements, and the customers' perceived information and guidance from the bank was studied through three statements. As for the results of the study, it was shown that the information and guidance given to the customers by their bank has the strongest effect on decreasing the usage barrier, but also the image, value and risk barriers. There was significant correlation of functional and psychological barriers. Based on the results and the literature used for the study, it was shown that limited supply of relevant information, as well as misinformation, will likely discourage the adoption of this type of innovation.

In Suoranta's (2013) study of the adoption of mobile banking in Finland a descriptive research approach was used, where Suoranta sent out a large postal survey to 3000 bank customers in Finland to encompass the phenomenon of mobile banking on a larger scale during the summer of 2002. 1253 usable responses were received. The results showed that users in the Southern Finland county, in the metropolitan area, were more likely to take mobile banking into use. The results also showed the male users were more likely to take mobile banking into use than the female users. Slade et al. (2013) found in their study about extending UTAUT2 to explore consumer adoption of mobile payments that trust plays in important role in financial transactions, but it plays an even more important role in electronic transactions, as they have more anonymity to them. Their study also showed that there's a great difference by gender when it comes to trust in Internet shopping, and that the effects of trust across genders should be considered more seriously when it comes to mobile payments.

Khan's (2004) study on the effect of distance on consumer adoption of online banking shows a large increase of the use of online banking between the years 1998 and 2001 due to the rapid diffusion of the internet. There was also a rise in the number of respondents starting to use the internet for gathering financial information. Khan also found that the distance to the closest bank branch didn't affect the use of online banking, but that the type of financial account had an effect on the use of online banking. Chong et al. (2010) used a survey distributed to 156 respondents to find out what factors might have an effect on the adoption of online banking. The study was conducted in Vietnam. The results of the study showed that the intention to use online banking is associated with the perceived usefulness, government/societal support and trust. The study also showed that perceived ease of use was not found to be associated with the adoption of online banking.

In Hosein's (2014) study on understanding consumer adoption rates among community banks for internet banking Hosein used a questionnaire that was formalized using literature on internet banking. The main purpose of the study was to identify the key factors behind facilitating current users of internet banking, and the factors that could increase the rate of adoption among non-users. The results showed that by increasing the ease of use for the consumers, there would be an increase in the use of internet banking services.

In Gounaris' and Koritos' (2008) study where they compared three alternative frameworks for investigating the drivers of internet banking adoption decision the purpose was to compare the Technology Acceptance Model and the Diffusion of Innovations model to the more underutilized model Perceived Characteristics of the Innovation. A web survey was used for the study, and the findings showed that the Perceived Characteristics of the Innovation model performed better than the two other models in predicting consumer adoption of internet banking.

Zhang et al. (2018) published a study on examining consumers' adoption of mobile banking services where they invited 530 bank customers to take part in the study online. The results showed that parallel to the users' feeling confident in using mobile banking services, the usefulness of the services, lack of trust in the services was not a behavioral issue among the respondents. The results showed that the participants of the study were not concerned with perceived issues that construct trust (e.g. risk of fraud and reliability

of the system). The participants were open to adopting the new services due to the advancements that suited their mobile needs.

### 2.9.1 Prior studies on adoption of open banking

Mobey Forum (2019) found in their study into consumers appetites for new banking services and open banking that after 1010 consumers reading a short text with information about Account Information Service Providers (AISPs), 34% of the Finnish consumers are moderately interested in taking AISP services into use, 23% are very interested and 6% are extremely interested. The results of the study also showed that the main reason for consumers experiencing a lack of interest for these types of services is the concern for the level of security of their personal information. There's a clear hesitance in sharing the personal information with nonbank providers.

Capgemini Research Institute (2019) compiled a study after conducting a service analysis and a customer survey on financial services and retail banking, and found that today's consumers demand a way more comprehensive and personalized banking experience, but that traditional banks still struggle to deliver that experience to their customers. Open banking is expected to play an important role in transforming the consumers' banking experiences and has the ability to provide banks with the opportunity to provide their consumers with a better experience. The results of the study showed that Gen Y and tech-savvy consumers are more attracted to seamless solutions and feel that traditional bank offerings are not adequate when it comes to meeting their expectations. FinTechs, BigTechs and the challenger banks have the ability to transform the last-mile banking experience and can by doing so fill service gaps. Capgemini Research Institute (2019) states that challenger banks are redefining banking interactions by using simplified and intuitive interfaces. Challenger banks use similar interfaces as the apps that consumers are used to using and are integrating offerings with the consumers' daily lives.

Furthermore, Capgemini Research Institute (2019) found that financial products from BigTechs are slightly more preferred by the consumers, and that three-fourths of the more tech-savvy consumers have already taken into use at least one financial product from one of the BigTech firms. The study also showed that more than 60% of consumers already

use services for payments, cards and core banking accounts from BigTechs and challenger banks.

# 3 METHOD

The thesis seeks to answer the main research question (What are the possible drivers and barriers to consumer adoption of third-party open banking services?). For the data collection and the data analysis of the thesis a qualitative method was used. This method was chosen to get in-depth answers of the respondents' own experiences, reflections and analysis of the various possible drivers and barriers for consumer adoption of open banking TPPs and so-called challenger banks. The aim of this thesis is to identify those possible drivers and barriers.

Semi-structured interviews were chosen as the data collection method for the thesis. The questions were designed to gain an in-depth understanding of the thesis topic. In semi-structured interviews the researcher has a list of pre-written questions in a so-called interview guide. The questions are covering quite specific topics, but the respondent has a lot of leeway in how he or she chooses to reply to the questions. Some questions that aren't in the interview guide may be added along the course of the interview if the interviewer/researcher sees the need for it based on the answers given by the interviewee/respondent. (Bryman & Bell, 2011)

## 3.1 Interview participants

The interview respondents were divided into three different groups. The expert group includes two respondents who work as experts in the field of open banking. The adopter group includes three respondents who have adopted open banking TPPs, so-called challenger bank services, successfully and are using them actively. The non-adopter group includes three respondents who haven't adopted open banking TPPs, so-called challenger bank services. By mixing the interview participants to represent different groups it is expected that the results can better view different perspectives to the research question and, thus, more clearly identify possible drivers and barriers for consumer adoption of open banking TPPs.

The adopter group and the non-adopter group consist of persons between the ages of 25 and 35 years old who live and work in Finland and are customers also at one or several account servicing banks (ASB), so-called traditional Finnish banks. Among the adopter group and the non-adopter group there is an equal amount of female and male respondents. The respondents in the three different groups (experts, adopters and non-adopters) were given a short name tag to be able to identify them easier in the presentation of the results (Table 1).

| Tag | Group | Description |
|---|---|---|
| **E1** | **Expert 1** | Male consultant working with open banking API |
| **E2** | **Expert 2** | Male, head of open banking at traditional bank |
| **A1** | **Adopter 1** | Male who uses Revolut as spending account |
| **A2** | **Adopter 2** | Female who uses Revolut when travelling |
| **A3** | **Adopter 3** | Male who uses N26 as spending account |
| **N1** | **Non-adopter 1** | Female who had never heard of open banking TPPs |
| **N2** | **Non-adopter 2** | Female who has never used any open banking service |
| **N3** | **Non-adopter 3** | Male who has never used any open banking service |

*Table 1- Interview respondents*

## 3.2 Data collection

The interviews were recorded digitally with the consent from the respondents and transcripts were written manually based on each interview recording. There were two different interview guides, one held for the expert group (Appendix 1) and the other one held for the adopter group and the non-adopter group (Appendix 2). The interviews were held as Zoom video meetings online, due to the Covid-19 outbreak and the national social distancing recommendations. The interviews lasted for 25-50 minutes per interview, depending on the length of the answers given by the respondents. The Zoom video calls were protected with passwords to ensure the confidentiality of the interview calls.

The interviews were conducted in English and Swedish. The author has proved language skills in both English and Swedish. Conducting the interviews in a proficient language

for both the author and each respondent adds reliability to this thesis. The purpose of the study was explained in detail to the respondents before the start of the interviews, and the respondents were given the opportunity to ask questions from the author about the topic at hand. The respondents were insured of the confidentiality of the interviews, and that the author and the presentation of the interview results will follow the data protection guidelines of the General Data Protection Regulation (GDPR).

It's important that the interviewee understands the topics that are being discussed in the interview. (Bryman & Bell, 2011) For the non-adopter group's interviews, a short introductory text with information about the open banking third-party provider services in question were given to the respondents in the group to get familiar with before the interview (Appendix 3).

The questions for the interviews were formed so that the inner idea of each interview question is captured and kept in focus. The open-ended questions were chosen for the interview guides to gain the understanding of the personal perspectives of the respondents. The interview questions are loosely based on the diffusion of innovations theory by Rogers (2003) and the model for resistance to innovation by Ram and Seth (1989). Drivers and barriers to consumer adoption of open banking TPP services, so-called challenger bank services, as the main theme for the interviews was communicated to the respondents before the conduction of the interviews. Some of the interview guide questions were left out if an answer to that question was given in a previous answer from the respondent. In addition to these questions, follow-up questions were asked if the author saw a need for it.

## 3.3 Data analyses

All the interviews were recorded, with the respondents' permission, to be able to write transcripts of the interviews afterwards. To write transcripts of interviews allows for a more thorough examination of what the respondents have answered to the questions and it allows the respondents' answers to be examined and analyzed several times. One of the most used approaches for qualitative data analysis is to look for and define themes in the transcripts from the interviews. This is called thematic analysis. In this type of analysis,

the themes are based on the occurrence and frequency of words, phrases and incidents. (Bryman & Bell, 2011)

The themes are based both on themes found in previous research and on the frequency of certain opinions among the respondents. The interview transcripts were printed out and analyzed, where after the different themes were marked with different colors in the transcripts (Appendix 4). Thereafter a table of the themes was created in Microsoft Excel (Table 2).

# 4 RESULTS

The author analyzed the interviews based on specific themes that came up in the respondents' answers. Every respondent answered the questions based on their own perspective and experience, whether that be from working as an expert in the field of open banking, using one or several of the services in question, or being completely new to the types of services discussed in the interviews. In the following chapters the author will present the findings from the interview transcripts.

The themes were identified in the transcripts (Appendix 4) and grouped based on theme in Microsoft Excel (Table 2). The tags of the respondents were written next to each theme that they mentioned and spoke about in their answers. Next each possible driver and barrier will be presented, along with evidence from the interviews in the form of citations from the respondents.

| Possible Drivers/Barriers | Theme | Respondents |
|---|---|---|
| **Drivers** | Easy/quick money transfers | E1, A1, N1, N2 |
| | Use of several currencies | A1, A2, A3, N1, N2 |
| | Lower prices than traditional banking services | E1, A1, A3 |
| | Internationally aimed | A1, A2, A3 |
| | Customer friendly | E1, A1, A3 |
| | Technically advanced / UX | E1, A1, A3, N3 |
| | Type of consumer | E1, E2, A1, A2, A3, N1, N2, N3 |
| **Barriers** | Lack of trust | E1, E2, A1, A3, N1, N3 |
| | IT Security / data sharing reliability | E1, A2, N2, N3 |
| | Finnish traditional banks are highly digitalized | A1, A2, A3, N2, N3 |
| | Too lazy/comfortable to change | E1, E2, N1, N3 |
| | Open banking TPP services only used as secondary banking services | E2, A1, A2, A3, N3 |
| | Lack of awareness | E2, A3, N1, N2, N3 |
| | Social pressure | N1 |
| | Lack of knowledge | A3, N1, N2, N3 |

*Table 2 - Identified themes*

## 4.1 Drivers

A common possible driver pointed out in four of the interviews was the "easy and quick money transfers" that these service providers enable the end users to make. The following three narratives describe well the interview participants view on the matter.

> "My son was studying in Colombia, and he had to come home now two weeks ago, and you can easily transfer money, just with a couple of clicks I can transfer money to his credit card, to his Revolut credit card, so it's more instantaneous. Or at least that's what it appears like to the end user" (Expert 1)

> "You can transfer the money really quickly to your friends and family members, and there are no charges when you use it abroad, which can otherwise rack up a lot of charges. [...] It's amazingly good for transferring money! [...] I feel like with my friends having Revolut you can transfer money quite quickly to each other." (Adopter 1)

> "[...] they are making transferring money between people easier!" (Non-adopter 2)

The "use of several currencies" for accounts and the easy inter-currency exchange came up as a possible driver in the interviews. This possible driver came up in the interviews with four of the respondents. The following three quotes represent the views of those respondents.

> "I took Revolut into use due to the claimed better inter-currency exchange rates..." (Adopter 2)

> "It's for persons who wants to easily switch between currencies and make fast payments online" (Non-adopter 1)

> "I think that having easy and cheap access to many different currencies is the absolute main driver. Which is really handy for people who are travelling a lot" (Non-adopter 2)

"Lower prices than for traditional banking services" being a possible driver for adopting these types of services came up in the answers from a few of the respondents.

> "[...] they offer better interest, less fees, etc. And for example, I have a Finnish Revolut account, and I can take out 2000 SEK in Sweden, 200 dollars in the States, all for free. And you can buy stocks, which I did about a month ago, and the fees for that are quite low. So, if there's a good value for money people are more inclined to actually change..." (Expert 1)

> "[...] N26, that is good as a secondary account since they offer free basic accounts, free cash withdrawals monthly and free international withdrawals at ATMs. […] One of the benefits for me was also that you get free cash withdrawals everywhere, also outside the EU area. I frequently travel to Russia, and there I have to use the N26 card, because you can withdraw cash in local ATMs. I think that's a nice benefit." (Adopter 2)

Some of the respondents brought up the "customer friendliness" and the "better user experience of these types of services" as a possible driver. The following two quotes represent the views of those respondents:

> "[…] They have lower overheads and are more customer friendly, less rigid and bureaucratic than banks are. They look more to the customer and think more of outside/inside thinking. […] Fintech's are pushing on that their services are more customer friendly, and that they are adapted for how people would actually like to do a payment." (Expert 1)

> "You can avoid a lot of stress, especially abroad, by opening an account completely online. You don't have to go anywhere to do that. You can do it online by just showing your passport, so it's very convenient. They also have an English-speaking customer service, which many people who work abroad appreciate greatly. Local banks don't have as great service in English." (Adopter 3)

The open banking TPP services being "more technically advanced" than the traditional banking services came up as a possible driver in four or the respondents' answers. The following two narratives describe well the interview participants view on the matter:

> "But if you take Revolut as an example, they today have more than 10 million customers, and up until a year ago they had spent zero euros in marketing. One of the things they did, one of the features that gathered the most customers was that you can split the bill at a restaurant. So, when people received the bill at a restaurant, and two of the people there had Revolut and the other two didn't have it, then the two people who didn't have it would download it. By scanning your driver's license, you could become a Revolut customer quickly, in 10-15 minutes, and then split the bill with the other people in the group." (Expert 1)

> "I think that these types of services are quite advanced, as you can do everything in the app and online. They have already built this image of being very advanced in technology." (Adopter 3)

All of the respondents in the adopter group, who have already taken one or several of these types of services into use stated in their interviews that one of the possible drivers is that these service providers are "more internationally aimed" than traditional banks.

> "The third-party services work across several countries and connects people in a way that a traditional bank can't. My Irish bank and my Finnish bank have no contact with each other, whereas I can transfer money from my Revolut account to anywhere in the world without any issue. That's probably the best thing about Revolut, that one thing, that it's online and international." (Adopter 1)

Seven out of the eight respondents recognized young professionals as a "type of consumer" that possibly would be quick to take challenger bank services into use. The following two narratives represent the views of those respondents:

"[…] young people are definitely much more willing to try new things" (Expert 1)

"Yes, younger people especially, because they are so in touch with everything, haha! No but, they are more in touch with technology and changes. I think that young adults are the first group to take these types of services into use. They are using banking services, and they are usually the first adopters when it comes to technological services." (Non-adopter 3)

Half of the respondents identified more tech-savvy persons as a "type of consumer" to possibly adopt challenger bank services, which is described in the following narratives:

"[…] especially people who work in technology or star-ups and are more interested in technology, These people are probably quicker to take these types of services into use." (Adopter 2)

"[..] I also think that persons who are interested in technology are quicker than others" (Non-adopter 1)

"And also really tech-savvy people, they are probably the first ones to adopt these services" (Non-adopter 2)

Half of the respondents also pinpointed people who do a lot of travelling and are more international as a "type of consumer" that possibly could be quicker to adopt these services.

"I think that people that live abroad, travel a lot or transfer money a lot would definitely find it easier to take it into use." (Adopter 1)

"I think that the persons travelling a lot could be quicker to take these services into use due to the marketing of the inter-currency exchange within the app itself. Maybe also those who are working abroad and are sending money home." (Adopter 2)

## 4.2 Barriers

The concern for the "data sharing reliability" from an open banking TPP came up as a possible barrier for adoption in some of the interviews. The following narratives depict the views of those respondents:

"Well the risk of your banking information ending up in the wrong hands, because you need to trust the company that you're granting access to your banking information and money. That's one risk, that your banking information might be leaked to someone with malicious intent, or not even that it's done with malicious intent, just that the developer of the open banking service won't take the security of the application as seriously as they should. […] Basically, security and privacy, that you can trust whoever you're granting the access to. That's what consumers should be worried about, because it's hard to take into consideration when you take a new service into use or a new application into use. You might not think about what repercussions that might have for you. They might be trustworthy, but can you trust that they have implemented their application in a secure manner, that no one will get access to your banking information?" (Non-adopter 3)

> "And they have so much data on you, and based on that data they can learn a lot about you and about how you spend your money and where you buy your groceries and gas, etc." (Expert 1)

"Lack of trust" towards open banking TPPs was brought up by a few of the respondents as a possible barrier, in the sense of hidden costs in relation with these types of services and that consumers trust their traditional banks more when it comes to the security of their money.

> "But regarding risks I think that people are worried about hidden costs with using a service like this. What costs will appear if you use it?" (Non-adopter 1)

> "I think that it's a pure trust thing. […] because the banks are definitely compliant with all the rules and regulations. You know that. Instinctively you know that. […] but if they are going to do something significant with the customers, like taking a mortgage or so, it's very questionable if they are reliable enough for that." (Expert 2)

> "I'm not sure about the legislation behind for example Revolut, if the accounts have the same security as the traditional banks, if they are members or the... I don't know the terminology now in English. I mean the guarantee that makes sure that your funds would be protected and recovered in case of bankruptcy." (Adopter 2)

Most of the respondents brought up "lack of trust" as the possible main barrier for adopting one of the open banking TPP services.

> "I remember last year there was a risk someone was talking about regarding Revolut, and them shutting down, and any money you having on the card getting lost, and I think that as some point the money was frozen for a period of time" (Adopter 1)

> "I have heard about people having had the money on their account frozen because there has been suspicion of... for example, if you suddenly make a deposit for a certain amount they might just freeze your account to investigate it. And I have heard that the communication regarding this hasn't been great or transparent. That's very bad" (Adopter 3)

> "I think that it's just about the gut feeling that consumers might have. Can I trust something that I have never heard of and that hasn't been established hundred years ago?" (Adopter 2)

Also, several of the respondents pointed out that due to the "Finnish traditional banks being highly digitalized" consumers won't see the need to change to another service.

> "I think that for Finnish consumers the benefits might not be as evitable as they could be in other countries, since our traditional banks are quite advanced in the digital payment environment where one could see the greatest benefit of these services" (Adopter 2)

> "I think that the Finnish traditional banks are quite fast with adapting to new technology and digitalization. Abroad, most traditional banks don't have services like MobilePay being offered by a traditional bank. In Finland this phenomenon is common, and people are used to it. So the Finnish

traditional banks have already taken the steps to have convenient apps and online services for their customers." (Adopter 3)

"And I also think that the Nordic banks are quite strong in providing very good digital services. So I think that the traditional banks are very strong here." (Non-adopter 2)

"[…] at least in Finland most people have adapted to some kind of online banking service provided by their traditional bank. […] All of them have effectively moved over to online banking and digital services." (Non-adopter 3)

Only one respondent recognized some "social pressure" in adopting open banking TPP services:

"Preferably it should be commonly used, that a lot of other people are using it. […] If I take myself as example, ever since I was a younger, I have gone to my parents for advice regarding financial issues, and they would probably not point me towards a service like this. That's why I think that people will be affected a lot by what the rest of the family is using." (Non-adopter 1)

Half of the respondents mentioned that consumers are "too lazy/comfortable to change" from their existing or current banking services with traditional banks that it will work as a possible barrier for them to adopt a new one from one of these service providers.

"I think that 97 percent of people are a little bit lazy. You need to be a little bit upset with your current bank in order to get started with trying out a new alternative. […] it takes time to move on to something new, and people are in general lazy. You need to get motivated to change to something new." (Expert 1)

"Well more than anything it's just because of laziness. They are lazy. It's the least amount of bother to stick to what you already have. If they are provided a well enough service, then they don't really have a reason to switch banks. So as long as the bank is providing an adequate service, it doesn't have to be brilliant or amazing, it just needs to work in order for people to stick with it." (Non-adopter 3)

Most of the respondents identified that "open banking TPP services are only used as secondary banking services" by most consumers.

"I think that it will be really hard for any open banking service to actually take over as the main bank for people, it will probably be used as a secondary bank for most people" (Non-adopter 3)

"I mean how many customers do you think moves all their money to Revolut? How many do you think have their salary account with Revolut? Not many, I would say. People's core service account they have with boring and trustworthy banks with good security. I don't really see that these challenger banks are stepping in and becoming the main banks for consumers." (Expert 2)

One of the expert group respondents mentioned the concern of adopting services by service providers that are from certain countries, that stereotypically has a less trustworthy image in Finland.

> "But I still think that you need to use common sense and be careful when you download apps in general, but especially when you download financial apps. I mean would you trust a Russian payment app? Probably not. A lot of people use Alipay in China. Do you trust the Chinese government? I guess that every person needs to make their own calls regarding that. […] I think that definitely there is some kind of risk depending on where the app is located and who is behind it and so on." (Expert 1)

The traditional Finnish banks also have an image amongst some of the respondents of being more secure than these new open banking service providers.

> "I wouldn't use N26 as my primary account, still prefer my traditional bank, probably due to the image that I have of them as more secure" (Adopter 3)

# 5 DISCUSSION

The research question for this study is the following:

*What are the possible drivers and barriers to consumer adoption of third-party open banking services?*

This qualitative study has identified the following seven possible drivers and eight possible barriers (see Table 3) to consumer adoption of open banking TPP services, which will be discussed in this chapter:

| Driver/Barrier | Theme |
|---|---|
| **Relative advantage** | Easy/quick money transfers |
| | Use of several currencies |
| | Lower prices than traditional banking services |
| | Internationally aimed |
| **Complexity** | Customer friendly |
| | Technically advanced / UX |
| **Trialability** | Type of consumer |
| **Risk barrier** | Lack of trust |
| | IT Security / data sharing reliability |
| **Image barrier** | Finnish traditional banks are highly digitalized |
| **Tradition barrier** | Too lazy/comfortable to change |
| **Value barrier** | Open banking TPP services only used as secondary banking services |
| **Usage barrier** | Lack of awareness |
| **Social barrier** | Social pressure |
| | Lack of knowledge |

*Table 3 - Results, Possible drivers and barriers*

### 5.1.1 Drivers

Easy and quick money transfers seem to be a major possible driver for consumer adoption as recognized by half of the respondents. This possible driver falls under relative advantage, as defined by Rogers (2003), as it's something that can be seen as bringing an advantage to the consumer. The use of several currencies falls under relative advantage, and so does the lower pricing of the open banking TPP services and these types of services being viewed as more internationally aimed than the ASB, so-called traditional banking services. The higher customer friendliness of these types of services falls under complexity in the diffusion of innovations theory, as it makes the innovation easier to use. These possible drivers can be matched with the results from Khan's (2004) study that found that the intention to use a new type of banking is associated with perceived usefulness, amongst other things. Furthermore, Hosein (2014) also found that by increasing the ease of use for the consumers, there would be an increase in use of such services.

The open banking TPP services being more technically advanced and bringing a better user experience (UX) for the consumers than the traditional banking services are matched under the complexity characteristic, as it makes the innovation easier to take into use and continue using. This possible driver concurs with previous research conducted by Capgemini Research Institute (2019) that today's consumers demand a way more comprehensive and personalized banking experience. It also concurs with Capgemini Research Institute's (2019) conclusion on open banking playing an important role in transforming the consumers' banking experience, as well as challenger banks redefining banking interactions with their simplified and intuitive interfaces. The open banking TPP services being more technically advanced and bringing a better user experience to the consumers concurs with Accenture Consulting's (2019) description of open banking delivering *"new ways of doing business, with a broad range of options and added value for consumers"*.

There were three different types of consumers that were identified in the results as being more prone to take these types of services into use: young professionals, tech-savvy persons, and persons living abroad or travelling frequently. These types of consumers fall

under the trialability characteristic defined by Rogers (2003), as these individuals are more open to experimenting with the innovation. These types of consumers being more prone to take open banking services into use concurs with Capgemini Research Institute's (2019) findings that showed that Gen Y and tech-savvy consumers are more attracted to seamless solutions and that these consumer groups feel that traditional bank offerings are not adequate when it comes to meeting their expectations. According to Ram and Seth (1989) the timing of adoption of an innovation is affected by innovation resistance, and adopters can be classified into five different categories. The three different types of consumers that were recognized in the results of this study as being more prone to take these types of services into use fall in one of the two first categories of adopters: innovators and early adopters.

### 5.1.2 Barriers

The protection of both personal and financial data seems to be a major concern among the respondents of this study. This concurs with previous research findings by Slade et al. (2013), who found that trust plays an important role in financial transactions. Trust plays an even more important role when it comes to electronic transactions, as they have more anonymity to them. The protection of personal data strongly relates to the General Data Protection Regulation (GDPR) as it regulates the protection and use of such data. Ram and Seth (1989) defines physical risks as *"Harm to person or property that may be inherent in the innovation"*, and so the worry about the level of IT security and data sharing reliability that was found in this study can be defined as a type of a physical risk. This possible barrier also concurs with the findings by Mobey Forum (2019) that states that the main reason for consumers experiencing a lack of interest for these types of services is the concern for the level of security of their personal information. Mobey Forum (2019) found that there's a clear hesitance in sharing the personal information with nonbank providers, which is also what the results of this study show.

Not protecting financial and personal data can also be seen as an economic risk, as defined by Ram and Seth (1989) the higher the cost of the innovation, the more it's perceived as an economic risk. Another risk barrier found in this study is the lack of trust when it comes to hidden costs, as stated by one respondent. Ram and Seth (1989) stated that when

there's a worry from the consumer about the innovation not having been tested sufficiently, it might not function as it should or be reliable, it can be categorized as a functional risk. Some of the respondents feel a lack of trust for how reliable the open banking TPP services are.

An image barrier found in this study is the mistrust in the open banking TPP services due to Finnish traditional banks being so modern and digitalized. Some of the respondents seemed to worry about the open banking TPP services not living up to the functional level of services from the Finnish traditional banks. Capgemini Research Institute (2019) brings up the importance of traditional banks integrating into consumers' lives to meet intuitive convenience demands. The image barrier is described by Ram and Seth (1989) as innovations having a certain identity from either the product class, the country or the industry that they can be related to. If the identity that the innovation belongs to is negative or unfavorable, this can create a certain barrier to adoption of said innovation, which is a perceptual problem most often created by stereotyped thinking. One of the expert group respondents in this study commented on the resistance towards the open banking third-party providers depending from which country of origin the service provider has and where it's operating.

Ram and Seth (1989) stated that there's a need for cultural change for the consumer to take an innovation into use. When the innovation forces consumers to deviate from their established traditions it can create resistance, which is defined as a tradition barrier by Ram and Seth (1989). The findings of this study show that some of the respondents see consumers as too lazy or too comfortable to switch to other banking services. The findings also show that there may be a value barrier when it comes to consumers using open banking TPP. They mainly see these services only as secondary banking services. There is hesitance in switching to open banking TPP services as the main banking service provider, and as Ram and Seth (1989) stated, the innovation needs to offer the consumers a good enough performance-to-price value in order to give the consumers the incentive to make the change.

Lack of awareness is a usage barrier found in this study. As found by Accenture Consulting (2019), the Nordic consumers don't know much about the available open

banking services, and they aren't sure about what they know about open banking. Laukkanen and Kiviniemi (2010) also found in their study that the information and guidance given by the banking service provider has the strongest effect on decreasing the usage barrier, but also the image, value and risk barriers. The results of this study show that there's a lack of knowledge, a social barrier, amongst consumers when it comes to these types of services. As stated by Rogers (2003), the first step to adoption of innovation, knowledge, occurs when the individual is exposed to the existence of the innovation and is made aware of the possible gains of understanding how the innovation functions. One of the respondents in this study brought up a possible social barrier of there being some social pressure in not switching from the traditional Finnish banks to open banking TPP services. Ram and Seth (1989) describes social barriers as the fear of facing social ostracism or peer ridicule.

## 5.2 Managerial implications

Based on the results of this study, which are summarized in Table 3 and then described in further detail in the previous chapters, the conclusion can be drawn that there is a need for increasing the general awareness and knowledge of open banking TPP services. This study found that the lack of awareness can possibly be solved by using word of mouth between consumers. Some of the respondents identified that the best way to market an open banking service is to use word of mouth and have the satisfied consumers inform other consumers about said innovation. Another way to decrease the lack of knowledge and awareness for these services that the respondents brought up is social media marketing, which concurs with Rogers' (2003) statement of mass media channels being one of the most efficient and rapid means to inform a larger group of potential adopters about an innovation. This recommendation also concurs with Laukkanen and Kiviniemi's (2010) statement that a limited supply of relevant information, as well as misinformation, will likely discourage the adoption of this type of innovation. Accenture Consulting (2019) found that by increasing the consumer knowledge, by showing tangible benefits, and by bolstering the security, the Nordic consumers will become receptive to open banking services. These open banking service providers could apply various tactics to

lower the potential barriers for an increased adoption of their services, and to play into the possible drivers that have been identified in the results of this study.

The perceived risk of unauthorized use of financial and personal data seems to be a major possible barrier for the wider adoption of the open banking TPP services, and so the recommendation would be for the service providers to provide clearer information on how both the financial and the personal data of consumers is used and the measures that are taken to protect this data, as defined and regulated by the GDPR. This might build the trust that there is currently a lack of, as identified by the findings of this study.

The findings of this study, especially the barriers to adoption of open banking TPP services, can be used by the traditional banks to increase their competitive advantage. By highlighting how highly digitalized they are, how reliable they are and have always been, the traditional banks have a higher probability of keeping their current customers and winning back some of the adopters of open banking TPP services.

## 5.3 Limitations and suggestions for future research

This study isn't without limitations. During the process of conducting the study, the author noticed that there could have been more interviews conducted, but due to limitations in time and the Covid-19 pandemic restrictions, the author wasn't able to add a larger sample of respondents to the study. Nevertheless, this study is delimited to a view of a few people, which limits the external validity of the study. The findings of this study are also mainly related to a Finnish context, and so in other countries different possible drivers and barriers may apply.

Further research into this topic could be conducted through a larger quantitative study on either the Finnish population or the population of all the European countries to gain better insights and understanding of the possible reasons for adoption or rejection of open banking services. Especially the image of open banking TPP, as in the image of their perceived reliability and how they are handling both financial and personal data, despite the implementation of the Second Payment Services Directive (PSD2) and the General Data Protection Regulation (GDPR), should be studied further. Furthermore, the

perceived image of the open banking TPP services being more suitable as a secondary banking service provider to the traditional banks could also be studied more in-depth.

# 6 CONCLUSIONS

The aim of this study was to generate better insights on the possible reasons for consumers to choose to either adopt or reject the so-called Challenger Bank services that came along with the implementation of PSD2. This qualitative study identified several thematic drivers and concerns that can reasonably be matched with the main elements in the Diffusion of Innovations theory and the Decision process of innovation adoption theory by Rogers (2003) and with a part of the main barriers of the Innovation Resistance theory by Ram and Seth (1989). Some of the thematic drivers and barriers found in this study could also be matched with previous research conducted on the adoption of both technological banking services and open banking services.

This study's findings suggested that the perceived complexity, relative advantage and trialability are important for consumer adoption of open banking services. The findings indicate that the following themes relate to relative advantage: Easy/quick money transfers, use of several currencies, lower prices than traditional banking services, and the open banking TPP services being more internationally aimed. The study results indicate that the following themes relate to complexity: the open banking third-party providers being more customer friendly and more technically advanced, as well as providing a better user experience in their services. Furthermore, the themes relating to trialability were the three types of consumers that are more prone to adopt theses services: young professionals, tech-savvy persons, as well as persons living abroad or travelling frequently. The possible drivers that were found in this study concurs to some extent with previous research made in consumer adoption of technological banking services and open banking.

The findings indicate that the following themes relate to the risk barrier: lack of trust, as well as the level of IT security and the data sharing reliability. The theme relating to the image barrier was the perceived image of Finnish traditional banks being highly digitalized and modern. The theme relating to the tradition barrier was that consumers are

too lazy and too comfortable to change or switch to an open banking TPP service. The theme relating to the value barrier was that open banking TPP services are mainly used as secondary banking services. Furthermore, the theme related to the usage barrier was lack of general awareness of open banking TPP services. The two themes that relate to the social barrier were: social pressure and lack of knowledge. The possible barriers that were found in this study concurs to some extent with previous research made in consumer adoption of technological banking services and open banking.

This study can possibly help open banking service providers and traditional banks gain a better insight into the drivers and barriers for consumers to adopt open banking third-party provider services. This study could also be used as a base for further research.

## REFERENCES


Accenture Consulting, 2019, *Opening Minds to Open banking – Building Acceptance for Open banking among Nordic Consumers*, Accenture. Available from: https://www.accenture.com/_acnmedia/pdf-99/accenture-nordic-consumer-study-open-banking.pdf Accessed: 9.5.2020

Bryman, A., Bell, E., 2011.*Business Research Methods*. Third edition. Oxford University Press.

Capgemini Research Institute, 2019. *World Retail Banking Report 2019*. Available from: https://www.capgemini.com/es-es/wp-content/uploads/sites/16/2019/10/World-Retail-Banking-Report-2019.pdf Accessed: 9.5.2020

Chong, A., Ooi, K., Lin, B., Tan, B. 2010. Online Banking Adoption: An empirical analysis. *International Journal of Bank Marketing*, ISSN: 0265-2323.

Gounaris, S., Koritos, C. 2008. *Investigating the drivers of Internet Banking adoption decision: A comparison of three alternative frameworks*. International Journal of Banking Marketing. ISSN: 0265-2323. Available from: https://www.emerald.com/insight/content/doi/10.1108/02652320810894370/full/html) Accessed: 9.5.2020

Hosein, N. 2014. *Internet Banking: Understanding consumer adoption rates among community banks*. ResearchGate. Available from: https://www.researchgate.net/profile/Nasim_Hosein/publication/242680389_Internet_banking_Understanding_consumer_adoption_rates_among_community_banks/links/546e16e40cf29806ec2e7ab6.pdf Accessed: 9.5.2020

Financial Supervisory Authority FIN-FSA. 2019. *PSD2*. Available from: https://www.finanssivalvonta.fi/en/regulation/regulatory-framework/psd2/ Accessed on 9.5.2020

Khan, B., 2004. *Consumer Adoption of Online Banking: Does Distance Matter?* University of California at Berkeley, Department of Economics. Working Paper No. E04-338. Available from: https://escholarship.org/content/qt2bt1d76s/qt2bt1d76s.pdf?t=lnokth&v=lg Accessed: 9.5.2020

Laukkanen, T., Kiviniemi, V., 2010. The Role of Information in Mobile Banking Resistance. *International Journal of Bank Marketing*. Available from: https://www.emerald.com/insight/content/doi/10.1108/02652321011064890/full/html) Accessed: 9.5.2020

Mobey Forum, 2019. *Open banking: Open Minds? Consumer Appetites for New Banking Services.* Mobey Forum's Open banking Expert Group. Available from: https://www.mobeyforum.org/open-banking-open-minds-consumer-appetites-for-new-banking-services/ Accessed: 9.5.2020

Monese webpages, 2020. Available from: https://monese.com Accessed: 9.5.2020

N26 webpages, 2020. Available from: https://n26.com Accessed: 9.5.2020

Ram, J. & Seth, N., 1989, *Consumer resistance to innovations: The marketing problem and its solutions*. Emory University.

Revolut webpages. 2020. Available from: https://revolut.com Accessed: 9.5.2020

Rogers, E.M. (2003). *Diffusion of Innovations*, 5th ed., Free Press, New York, NY.

Slade, E., Williams, M., Dwivedi, Y., 2013. *Extending UTAUT2 to Explore Consumer Adoption of Mobile Payments*. UK Academy for Information Systems Conference Proceedings 2013. 36. Available from: http://aisel.aisnet.org/ukais2013/36 Accessed: 9.5.2020

Suoranta, M., 2003. *Adoption of Mobile Banking in Finland*. Jyväskylä University. Available from:.https://jyx.jyu.fi/bitstream/handle/123456789/13203/9513916545.pdf?sequence=1&isAllowed=y Accessed: 9.5.2020

The European Parliament and the Council of the European Union. 2009. *DIRECTIVE 2009/110/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL*. Official Journal of the European Union. Available from: https://eur-lex.europa.eu/eli/dir/2009/110/oj Accessed: 9.5.2020

The European Parliament and the Council of payment services in the internal market. 2015. *Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market*. Official Journal of the European Union. Available from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32015L2366 Accessed: 9.5.2020

The European Parliament and of the Council of 27 April 2016. 2016. Directive 95/46/EC General Data Protection Regulation. Available from: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679 Accessed: 9.5.2020

TransferWise webpages, 2020. Available from: https://TransferWise.com Accessed: 9.5.2020

Zhang, T., Lu, C., Kizildag, M., 2018. *Banking "on-the-go": Examining consumers adoption of mobile banking services*. International Journal of Quality of Service Sciences. Vol.10, No.3. pp.279-295. Available from: www.emeraldinsight.com/1756-669X.htm Accessed: 9.5.2020

# APPENDICES

## APPENDIX 1 – INTERVIEW GUIDE, EXPERT GROUP

| |
|---|
| 1. How does your own work relate to Open banking? |
| 2. In your opinion, what are the main advantages for consumers to adopt Open banking services? Are there any relative advantages for them to use Open banking services over traditional banking services? |
| 3. What do you believe are the main drivers for consumers to take Open banking services into use? |
| 4. What are the possible risks for consumers in using Open banking? Or what are the risks that a consumer might see in taking these services into use? |
| 5. Do you think that consumers might be worried about who's handling their money and their personal data? |
| 6. Do you think that consumers are afraid of the technology behind these services failing? |
| 7. Are the Open banking services generally easier for the consumer to use than traditional banking services? |
| 8. Are there some consumer groups that could be quicker to take these types of services into use? And why? |
| 9. What are the reasons related to traditions that could stop end users from taking Open banking services into use? |
| 10. How strong is the position of the traditional banks in Finland and the Nordics? |
| 11. What makes end users stick to their old traditional banks? |
| 12. What advantages can traditional banks gain by integrating open banking services with their already existing services? |
| 13. In your opinion, what are the reasons for traditional banks to be slow with integrating open banking features with their own services? |
| 14. How could Open banking service providers reach end users better? |

| |
|---|
| 15. Are there other ways that Open banking service providers could increase the general awareness of their services? |
| 16. What developments do you see coming in Open banking in the future? |
| 17. In your opinion, what are the most known Open banking providers in the Nordics? |
| 18. Are there big differences in the Open banking services offered by BigTechs vs. smaller competitors in this market? And how do you think that the consumers see these differences? |

## APPENDIX 2 – INTERVIEW GUIDE, ADOPTER & NON-ADOPTER GROUPS

| |
|---|
| 1. Do you have any previous knowledge or experience of what Open banking, Challenger Banks or Account Information Services are? |
| 2. In your opinion, what are the main advantages for consumers to adopt these Open banking services? What can these services help a consumer with? |
| 3. What do you believe are the main drivers for consumers to take Open banking services into use? |
| 4. What are the possible risks for consumers in using Open banking services? Or what are the risks that a consumer might see in taking these services into use? |
| 5. Do you think that consumers might be worried about who's handling their money and their personal data? And if so, why? |
| 6. Do you think that consumers are worried about the technology behind these services failing? And if so, why? |
| 7. Are there some consumer groups that could be quicker to take these types of services into use? And if so, why? |
| 8. What are the reasons related to traditions that could stop end users from taking Open banking services into use? |
| 9. How strong is the position of the traditional banks in Finland and the Nordics? |
| 10. What do you think makes end users stick to their old traditional banks? |
| 11. What advantages can traditional banks gain by integrating open banking services with their already existing services? |
| 12. In your opinion, what are the reasons for some traditional banks to be slow with integrating open banking features with their own services? |
| 13. Are there other ways that Open banking service providers could increase the general awareness of their services? Is there a better way for them to reach potential customers? |
| 14. What developments do you see coming in Open banking in the future? |

## APPENDIX 3 – INTRODUCTORY TEXT FOR NON-ADOPTER GROUP

Account Information Service Provider (AISP): have the permission and access to retrieve and view account data provided by banks and financial institutions, given the permission from the account holder. A number of AISPs collect financial information and process said information to make it easy for people to understand their previous or current financial situation, create budgets, and monitor their own spending. These AISPs can collect data from several bank accounts so the user can see all information about their spending in one single place.

Payment Initiation Service Provider (PISP): have the permission and access to initiate payments into or out of a user's account, given the permission from the account holder. PISPs have the authorization to execute payments on behalf of the account holder. PISPs can initiate transfers directly to or from the account holders bank account. One simple explanation is that the AISPs have 'read-only' access and the PISPs have 'read-write' access. Examples of PISPs are:

- Financial management tools

- Challenger banks: A company, which isn't a traditional bank, but has acquired a traditional banking license during the last 3-5 years. They have a completely digital channel or several channels for all contact with their customers and potential customers. The name comes from them challenging the products, the user experience and the general concept of traditional banks. (Mobey Forum, 2019)

# APPENDIX 4 – EXAMPLE OF DATA ANALYSIS METHOD